MACHINE LEARNING TO BETTER PREDICT PATIENT NO SHOWS

MEDICAL FIELD, OR MEDICAL METHOD
Radiology / Medical Imaging / Diagnostics

TYPE
☑ Decision support ☐ Autonomous decision making

CATEGORY
☐ Prevention ☐ Detection ☐ Diagnosis ☐ Treatment
☑ Other

DESCRIPTION
Fully understanding how to best manage exam scheduling in an imaging department or practice is considerable given the wide range of factors contributing to patients missing appointments—creating equipment underutilization, idle staff, and delayed diagnosis.

Smart Scheduling is designed to help manage these challenges by utilizing machine learning models leveraging a wide range of factors, both internal and external of the imaging practice, to change the paradigm of scheduling workflows to enable better patient access.

AIM / PURPOSE
GE Healthcare's Smart Scheduling changes the paradigm of scheduling workflows starting with patient no show to help deliver better patient access.

OUTPUT / RESULTS
The result of the Smart Scheduling's model is a probability for the patient to not show up for the examination. Patients with high probabilities can be targeted to get further reminder, organize transport, or other methods to enable better patient access.

AI METHODOLOGY
Machine Learning Gradient Boosting Decision Trees.

INPUT / SIZE OF THE DATA
The Product is a Machine Learning Pipeline, that creates an AI model for each hospital/medical facility individually. The expected amount of examinations to train model is/can be as little as 100 000, often covering several years to account for seasonality. The data volume is necessary as well, because missed appointments ratio is/can be as low as 2% and high as 6.5%[1].

Sites need to have a method to identify missed appointments either systemically or through process changes. However, we have also developed an algorithm to detect missed appointments in addition to the annotation needs.

REFERENCE DOCUMENTS / LINKS / PUBLICATIONS
1. H. B. Harvey MD JD, C Liu MS, J. Ai BS, et al, *Journal of the American College of Radiology, Vol14, Iss13, P1303-1309,* "Predicting No-Shows in Radiology Using Regression Modeling of Data Available in Electronic Medical Record"
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SOURCE
GE Healthcare